

## **ARGUMENTS/REMARKS**

Claims 1, 3-13, and 15-22 are currently pending, with claims 1 and 3 having been amended above.

### **Claims Rejection – 35 U.S.C. § 112**

Claim 3 has been amended to remove the objected to terms.

### **Claims Rejection – 35 U.S.C. § 103**

Claims 1, 3-13 and 15-22 stand rejected under 35 USC 103(a) as obvious over *Brown* (5,300,126). Applicants and the Examiner agree on the fact that *Brown* does not specifically disclose the step of separating Diels-Alder adduct form the product mixture. Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness as there is no teaching or suggestion to modify *Brown* to remove the Diels-Alder adduct, and in fact there is express teaching against such.

The *Brown* reference is directed to preparation of gasoline blending components having desirable oxygen and octane values, for example ethers such as MTBE. In preparing such gasoline blending components, a liquid olefinic hydrocarbon feedstream such as FCC gasoline comprising C<sub>5</sub>-C<sub>6</sub> is subjected to catalytic conversion via contact with an acidic catalyst. Conjugated dienes present in the olefinic hydrocarbon feedstock are a poison to the acidic catalyst. *Brown* teaches conversion of the conjugated dienes to the corresponding Diels-Alder adduct, which are not poison to the acidic catalyst. Given that the resulting adduct does not deactivate the catalyst, *Brown* does not provide any motivation for removing the adduct from the product mixture. *Brown* is directed to the treatment of liquid feedstreams that are suitable for gasoline blending components, whereas amended claim 1 recites purification of a gaseous mono olefin stream (as shown in the Examples), which is not

suitable for gasoline blending. Furthermore, *Brown* repeatedly and specifically teaches against removing the adduct because the adduct is beneficial for gasoline blending purposes:

...reacting the dienes with one or more dienophiles to form the corresponding Diels-Alder adduct, followed by catalytic conversion of the olefinic hydrocarbon feedstock containing the adduct. See Abstract. See also col. 3, lines 14-24.

...it has been discovered that the adduct, particularly those adducts formed with MA [maleic anhydride], is in the gasoline boiling range and contributes usefully to the oxygen enrichment of the gasoline and to octane value. See Abstract.

See also col. 3, lines 31-37.

The invention further encompasses a novel composition of high octane value gasoline having an enhanced oxygen content. The novel composition consists of C5+ gasoline boiling range hydrocarbons containing alkyl substituted tetrahydropthalic anhydride [i.e., the adduct] or C1-C4 esters thereof. See col. 3, line 67 – col. 4, line 4.

One of the significant features of the process of the invention is the fact that the treated feedstock containing the

diene/dienophile adduct can be subjected to etherification of  
isoolefins in the feedstock without separation of the adduct.

See col. 9, lines 3-7.

It is a matter of considerable surprise and novelty in the present invention that the tetrahydrophthalic anhydride adducts prepared as described above in a gasoline boiling range hydrocarbon mixture result in a unique composition that displays both high octane value as well as supplementing the oxygen content of the gasoline. See col. 9, lines 23-28.

Given that usefulness of the adduct for gasoline blending is a “significant feature” and of “considerable surprise and novelty”, *Brown* unequivocally teaches against the removal of the adduct. Thus, one skilled in the art would not be motivated to remove the adduct because *Brown* teaches away from such, and therefore Applicants respectfully submit that *Brown* does not provide a *prima facie* case of obviousness against the pending claims.

## **CONCLUSION**

Applicants respectfully submit that the present application as amended is now in condition for allowance. If the Examiner has any questions or comments or otherwise feels it would be helpful in expediting the application, he is encouraged to telephone the undersigned at (972) 731-2288.

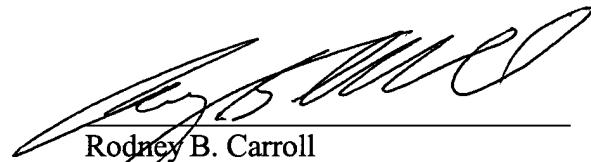
The Commissioner is hereby authorized to charge payment of any further fees associated with any of the foregoing papers submitted herewith, or to credit any overpayment thereof, to Deposit Account No. 50-1515 , Conley Rose, P.C.

Respectfully submitted,

CONLEY ROSE, P.C.

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